OTHE UNITED STATES DISTRICT COURT
FOR THE NORTHERN DISTRICT OF ILLINOIS
EASTERN DIVISION

FEIT ELECTRIC CO., INC.,	)	
	)	
Plaintiff,	)	No. 13 09339
v.	)	
	)	Chief Judge Virginia M. Kendall
CFL TECHNOLOGIES, LLC,	)	
	)	
Defendant.	)	

MEMORANDUM OPINION & ORDER

In 2013, Plaintiff Feit Electric Company, Inc. ("Feit Electric") filed a declaratory action against Defendant CFL Technologies, LLC's ("CFLT") predecessor alleging that U.S. Patent Nos. 6,172,464 ("the '464 Patent") and 5,757,140 ("the '140 Patent") (collectively, the "Patents-in-Suit") are unenforceable. The Court held a claim construction hearing on November 6, 2024, at which time it heard argument regarding the proper construction for several disputed claim terms.[1] The Court's construction of these terms is set forth below.

BACKGROUND

This litigation concerns compact fluorescent light ("CFL") bulb lamps—a type of light bulb commonly used in household lamps. (Dkt. 320 at 5). The parties disagree over how broadly to construe terms in three claims across two patents: Claims 16 and 17 of the '140 patent and Claim 3 of the '464 patent. (Dkt. 320 at 1). For Claims 16 and 17 of the '140 Patent, the parties dispute the meaning of "inverter and load circuitry" and "gas discharge lamp." (*See* Dkt. 329). For Claim 3 of the '464 Patent, the parties dispute the meaning of "electronic sub-assembly,"

[1] Prior to the hearing, the parties briefed their proposed constructions. *See* Dkt. 320 (Feit Electric's Opening Claim Construction Brief); Dkt. 325 (CFLT's Claim Construction Brief); Dkt. 327 (Feit Electric's Reply Claim Construction Brief); Dkt. 373 (CFLT's Claim Construction Sur-Reply); Dkt. 329 (Joint Claim Construction Chart).

"fluorescent lamp" and "distinctly shorter." (Dkt. 325 at 2). Generally, CFLT advocates for a broad interpretation of the claims, while Feit contends that the Court should interpret them more narrowly. (*See* Dkt. 320; Dkt. 325).

The Patents-in-Suit relate to so-called "electronic ballast technology," the mechanism that starts and drives these fluorescent light bulbs. (*Id.* at 5). The process typically has three stages. (*Id.*) First, the device takes the normal 60 hertz ("Hz") alternating current ("AC") from a wall outlet and converts it into what is called "direct current" ("DC"). (*See* Dkt. 325-1, ¶15, Exhibit A – Expert Opinion of Mark Ehsani.) Second, it changes that DC back into AC, but at a much higher frequency (about 30,000 Hz), which is what a lamp requires to run properly. (*Id.*) Third, the device fine-tunes that high-frequency AC so it can be used by the lamp. (*Id.*)

The electronic ballasts at issue here are made to power screw-in CFL bulbs. (*Id.*) The circuitry must be sufficiently compact to fit within the confines of the housing base of a CFL. In the image below (right), Figure 1, the circuitry must fit within element 12. The other image (left) is Feit Electric lightbulb.

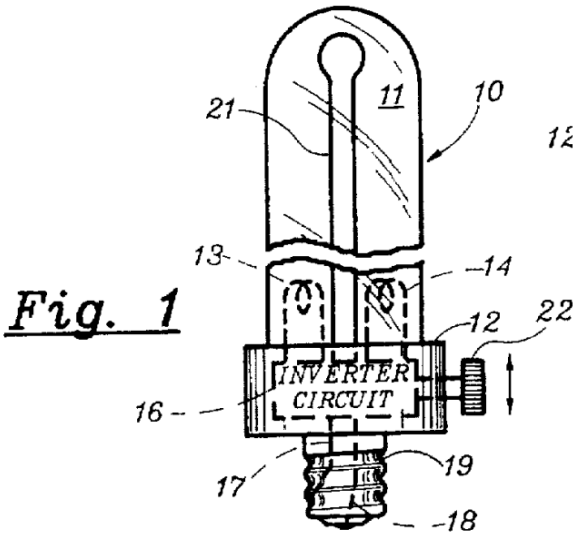


Fig. 1

LEGAL STANDARD

Claim construction resolves disputed meanings in a patent to clarify and explain what the claims cover. *See Terlep v. Brinkmann Corp.*, 418 F.3d 1379, 1382 (Fed. Cir. 2005). The construction of the claims at issue is a legal determination to be made by the court. *See id.* (citing *Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 970–71 (Fed. Cir. 1995)). Generally, the terms of a claim are given the ordinary and customary meaning that the terms would have to a person of ordinary skill in the art ("POSA") at the time of the filing date of the patent application. *See Phillips v. AWH Corp.*, 415 F.3d 1303, 1313 (Fed. Cir. 2005). A POSA is in the best position to understand the claim language because, like the inventor himself, he is skilled in the field. *Id.* When interpreting an asserted claim, the court looks first to intrinsic evidence: the words of the claims, the patent specification, and the prosecution history. *See id.* at 1316-18.

The claim language is the starting point for claim construction analysis because it frames and ultimately resolves all issues of claim interpretation. *See Sumitomo Dainippon Pharma Co., Ltd. v. Emcure Pharmaceuticals Limited,* 887 F.3d 1153, 1157–58 (Fed. Cir. 2018); *Robotic Vision Sys., Inc. v. View Eng'g Inc.*, 189 F.3d 1370, 1375 (Fed. Cir. 1997). In some cases, the "ordinary and customary" meaning of the claim language may be readily apparent, even to lay judges, and the court applies the widely accepted meaning of the commonly understood words. *See Phillips*, 415 F.3d at 1314. In such cases, a general-purpose dictionary may be helpful. *See id.* In many cases, however, the court must proceed beyond the bare language of the claims and examine the patent specification. *See id.* at 1314–15.

"The [POSA] is deemed to read the claim term not only in the context of the particular claim in which the disputed term appears, but in the context of the entire patent, including the specification." *Id.* at 1313. The specification is usually dispositive; "'it is the single best guide to

the meaning of a disputed term.'" *Id.* at 1315 (quoting *Vitronics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576, 1582 (Fed. Cir. 1996)). In the specification, the patentee provides a written description of the invention that allows a POSA to make and use the invention. *See id.* at 1323. At times, the patentee uses the specification to "set forth an explicit definition for a claim term that could differ in scope from that which would be afforded by its ordinary meaning." *Rexnord Corp. v. Laitram Corp.*, 274 F.3d 1336, 1342 (Fed. Cir. 2001).

The court may also look to the patent's prosecution history. *See Phillips*, 415 F.3d at 1317. While the prosecution history often lacks the clarity of and is less useful than the specification, it may inform the court of the meaning of a claim term by illustrating how the inventor understood the invention as well as how the inventor may have limited the scope of the invention. *See id.* The prosecution history is generally relevant if the Patent and Trademark Office considered a particular interpretation of the claim and specifically disclaimed some aspect during the prosecution of the patent. *See Schumer v. Lab. Comp.* Sys., 308 F.3d 1304, 1313 (Fed. Cir. 2002).

Finally, a court may also consult "extrinsic evidence," such as dictionaries, treatises, and expert testimony, to "shed useful light on the relevant art." *Phillips*, 415 F.3d at 1317–18. Generally, extrinsic evidence is "less reliable" than intrinsic evidence and is "unlikely to result in a reliable interpretation of patent claim scope unless considered in the context of the intrinsic evidence." *Id.* at 1318–19. With respect to the use of dictionaries, technical or general, a court may consult such evidence "so long as the dictionary definition does not contradict any definition found in or ascertained by a reading of the patent documents." *Id.* at 1322-23.

Means-plus-function claims allows a patentee to express a claim limitation by reciting a function to be performed rather than a structure for performing that function. Such claims are governed by 35 U.S.C. § 112, ¶ 6, which states:

> An element in a claim for a combination may be expressed as a means or step for performing a specified function without the recital of structure, material, or acts in support thereof, and such claim shall be construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof.

A means-function claim construction occurs in two steps. *Rain Computing, Inc. v. Samsung Elecs. Am.*, Inc., 989 F.3d 1002, 1007 (Fed. Cir. 2021). First, the Court first identifies the claim function then classifies the structure. *Id.* At step two, the Court "determine[s] what structure, if any, disclosed in the specification corresponds to the claimed function." *Id.* "Under this second step, structure disclosed in the specification is corresponding structure only if the specification or prosecution history clearly links or associates that structure to the function recited in the claim." *Id.* (quoting *Sony Corp. v. Iancu*, 924 F.3d 1235, 1239 (Fed. Cir. 2019)).

DISCUSSION

I. The '140 Patent

Below is a depiction of the '140 Patent ("Figure 2"). There are two terms at issue under the '140 Patent: "inverter and load circuitry" and "gas discharge lamp."

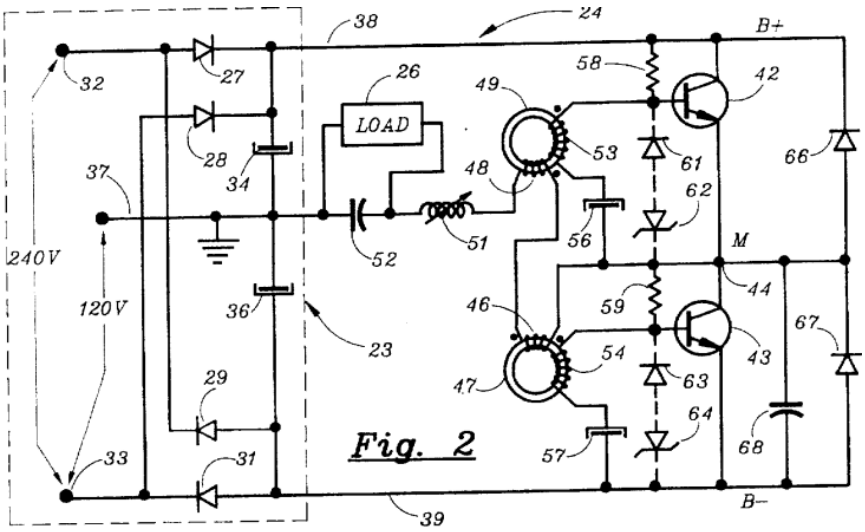


Fig. 2

(Dkt. 325 at 4).

The full claim language contains four functions, which are separated by semi-colons. This is undisputed. (Dkt. 325 at 3). Within those functions, the parties disagree about the structure—specifically, the meaning of certain terms. Below is the full claim language, with disputed terms italicized:

> An arrangement comprising:
>
> a source providing a DC supply voltage at a set of DC terminals; and
>
> *inverter and load circuitry* connected with the DC terminals and operative to provide an AC voltage at a pair of AC terminals with which is connected a gas discharge lamp; the AC voltage being of a frequency substantially higher than that of the power line voltage on an ordinary electric utility power line; the *gas discharge lamp* being characterized by drawing a lamp current from the AC terminals at certain times and not at other times; *the inverter and load circuitry* being characterized in that the frequency of the AC voltage is different during the times when the lamp current is being drawn as compared with times when lamp current is not being drawn.

(Dkt. 320 at 6); (Dkt. 320-1, Judge Andrews's Delaware Opinion).

a. "[I]nverter and load circuitry" Means-Plus-Function Limitation (Claims 16 and 17)

The first term at issue is "inverter and load circuitry." Within this term, the parties dispute several "elements." In a means-function limitation, the first step in construing is to identify the function explicitly cited in the claim. *54rt Techs., Inc. v. Empak, Inc.*, 268 F.3d 1364, 1369 (Fed. Cir. 2001). The parties agree that the "inverter and load circuitry" limitation is in means-plus-function form. (Dkt. 325 at 2). Further, the parties agree that the "inverter and load circuitry" performs four functions. (Dkt. 325 at 3).

In a mean-plus function, "[t]he next step is to identify the corresponding structure set forth in the written description that performs the particular function set forth in the claim." *Asyst Techs.,*

Inc. v. Empak, Inc., 268 F.3d 1364, 1369–70 (Fed. Cir. 2001). The parties disagree as to the extent of structural detail each function requires. (*Id.*) The corresponding structure to a function set forth in a means-plus-function limitation "must be necessary to perform the claimed function." *Frank's Casing Crew & Rental Tools, Inc. v. Weatherford Int'l, Inc.*, 389 F.3d 1370, 1378 (Fed. Cir. 2004). This means that the Court will interpret the claim language only to include structural elements, which are *required* to perform the function.

According to Feit, the patent's inventor only meant to include a limited number of elements in his patent, while CFLT argues for many components, with expanded roles. CFLT argues that Feit improperly reads in specific, additional components, which are not necessary for the function to operate. [2] (Dkt. 325 at 5).

Feit's Proposed Construction:

> Half-bridge inverter with two transistors series-connected across the DC output of the power supply and two toroidal saturable core transformers each with a secondary winding, an external load, a variable inductor and series-connected capacitor, two bias capacitors, two shunt diodes, a capacitor connected across the collector-emitter terminals of one of the toroidal saturable core transformers, a toroid heater to heat the toroidal saturable transformers and connected in series with the external load and the series connected capacitor

CFLT's Proposed Construction:

> To achieve all functions, the corresponding structure comprises a voltage-fed half-bridge inverter (24) to the extent of at least one of toroidal saturable transformers (49, 47) whose secondary winding(s) drive bases of two inverter transistors (42, 43) for turn-on and turn-off, and whose primary winding(s) plus the inductor (51) / capacitor (52) combination form a series current path between the midpoint of transistors (42, 43) and the return path (e.g., ground or AC bus), with lamp load connectability across capacitor (52); the lamp current flowing through at least one of the primary winding(s) of saturable transformers (49, 47).

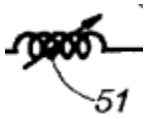
[2] The number in parenthesis refers to the number in Figure 2, to which the term corresponds. For example, "variable inductor (52)" means that at 52 in Figure 2, one can find the "variable inductor."

(Dkt. 320 at 6; Dkt. 329 at 3). Below, the Court analyzes the meaning of each of the "inverter and load circuitry" structural elements, about which the parties disagree.[3]

i. "Variable" Inductor (51)

The parties agree that the structure includes inductor (51) but disagree about whether the inductor should be "variable." (Dkt. 325 at 7). A variable inductor, as opposed to a fixed inductor, is an inductor whose electric charge flow can change. (Dkt. 325-1, ¶ 23). Patent '140's specification states: "[t]he inductor 51, preferably a known ferrite core inductor, has an inductance variable by mechanical adjustment of the air gap in order to effect variation in the level of the inductor and capacitor voltage and hence the power available to the load, as will be described." (Dkt. 319, JA-9 at 5:10–14, Appendix, Patent '140).

The record demonstrates that a POSA would agree with Feit's construction; the inductor *is* variable. (Dkt. 320 at 9). First and most obviously, element 51 in Figure 2 is depicted using the industry symbol for a variable inductor:



(Dkt. 319, JA-2). This is strong evidence that the inductor is variable. *Application of Gay*, 309 F.2d 769, 774 (C.C.P.A. 1962) ("The term 'specification' must be taken to include the drawings which are a part of it.") Second, Patent '140's language plainly states that "inductor 51 . . . has an inductance *variable* by . . . " (Dkt. 319, JA-9 at 5:10–14).

[3] For "inverter and load circuitry," the following words are in dispute: (a) "***two*** toroidal saturable core transformers"; (b) "a ***variable*** inductor"; (c) "a ***toroid heater***"; (d) "an ***external load***"; (e) "***a capacitor connected across the collector-emitter terminals of one of the toroidal saturable core transformers***"; (f) "***two bias capacitors***"; and (g) "***two shunt diodes***." Bolded words are terms, which Feit seeks to add into the claim language. (Dkt. 325 at 5).

The fact that the next sentence in the specification states that the variable accomplishes lamp dimming does not necessarily render the term "variable" inapplicable to the "inverter and load circuitry." *Jansen v. Rexall Sundown, Inc.*, 342 F.3d 1329, 1332 (Fed. Cir. 2003) (explaining claim construction begins with the plain meaning of the patent language). Though it may be true, as CFLT contends, that a fixed inductor would also accomplish the function, it only matters what appears *in the patent specification*. *Biomedino, LLC v. Waters Techs. Corp.*, 490 F.3d 946, 952 (Fed. Cir. 2007) (making clear that "structure supporting a means-plus-function claim under § 112, ¶ 6 must appear in the specification."). As Feit points out, "[t]hat ordinarily skilled artisans could carry out the recited function in a variety of ways is precisely why claims written in 'means-plus-function' form must disclose the particular structure that is used to perform the recited function." *Blackboard, Inc. v. Desire2Learn, Inc.*, 574 F.3d 1371, 1385 (Fed. Cir. 2009); (Dkt. 327 at 3).

Accordingly, because a POSA would understand the specification as requiring a *variable* inductor, the Court endorses that understanding.

ii. Toroidal Saturable Core Transformers with Secondary Winding

Next, the parties disagree over the number of "toroidal saturable core transformers" required. A saturable transformer supplies the current that controls the transistor, turning it on and off automatically in response to the current drawn by the lamp. (Dkt. 325 at 5). Feit's proposed construction states "[h]alf-bridge inverter with two transistors series-connected across the DC output of the power supply and *two toroidal saturable core transformers* . . . (Dkt. 329 at 3) (emphasis added). In contrast, CFLT claims that only one saturable transformer is required. (Dkt. 325 at 5).

Under step two in a means-function claim analysis, a patent specification which discloses a structure is a "corresponding structure only if the specification or prosecution history clearly links or associates that structure to the function recited in the claim." *Rain Computing, Inc.*, 989 F.3d at 1007. Additionally, the statute (35 U.S.C. § 112), which sets of disclosure requirements for patent specifications, requires both identification of the claimed function and identification of the structure in the written description necessary to perform that function. *Micro Chem., Inc. v. Great Plains Chem. Co.*, 194 F.3d 1250, 1258 (Fed. Cir. 1999). The statute "does not 'permit incorporation of structure from the written description beyond that necessary to perform the claimed function.' "*Asyst*, 268 F.3d at 1370 (quoting *Micro Chem., Inc.* 194 F.3d at 1263).

Here, Figure 2 depicts two saturable inductors. (*See* elements 47 and 49). The written description, however, states "[t]ransistor drive current is preferably provided through the use of *at least one saturable* inductor to control the transistor inversion frequency . . . " (Dkt. 325-3 at 3:8-11, Exhibit C) (emphasis added). "The close kinship between the written description and the claims is enforced by the statutory requirement that the specification describe the claimed invention in 'full, clear, concise, and exact terms." *ICU Med., Inc. v. Alaris Med. Sys., Inc.*, 558 F.3d 1368, 1374 (Fed. Cir. 2009) Furthermore, because it is appropriate, "to rely heavily on the written description for guidance as to the meaning of the claims," a POSA would likely agree that *at least one* saturable inductor is required, as opposed to two. *Id.* at 1374. The Court, thus, adopts this construction.

As to whether the toroidal saturable core transformers require secondary windings, the parties also disagree. CFLT argues that a POSA would understand from the specification that a single saturable core transformer would include a single "primary" winding on its core to receive

current, and two "secondary" windings on its core. (Dkt. 325 at 7). Feit contends that there is no basis to require two windings.

Here, because a saturable core transformer requires a secondary winding to drive the current, only one secondary winding is required. (Dkt. 319, JA-9 at 15: 18–20). Having already found that the specification requires only one saturable core transformer, it would be pointless to require *two* secondary windings.

iii. Toroid Heater

The next issue is whether the structure requires a toroid heater. Feit states that a toroid heater is required while CFLT disagrees. (Dkt. 327 at 5); (Dkt. 325 at 9). Feit's bases its argument on prosecution history. (Dkt. 327 at 5). Specifically, in 1994, the patent applicant amended the patent stating that "all the . . . pending claims[] are directed to the embodiment of [Figure 2] … according to the modification represented by Fig[ure] 6." (Dkt. 325 at 10). In other words, Figure 2 depicts the invention, according to the modification in Figure 6—which includes a toroid heater. (Dkt. 327 at 7). CFLT claims that the phrase "directed to," in the amendment, means "covers," not "requires," the circuits of Figures 2 and 6. (Dkt. 325 at 10). Therefore, from CFLT's perspective, though a toroidal heater could make the circuit work, its inclusion is not necessary. (*Id.*)

Neither party cites caselaw nor can the Court find any, which explicitly dictates whether the term "directed to" means "to cover" or "to require." The phrase is not covered by Merriam-Webster.[4] *See Phillips*, 415 F.3d at 1314 (courts may turn to dictionary definitions when assessing prosecution history). For prosecution history to narrow the meaning of a claim, however, the patentee must "unequivocally and unambiguously disavow[] a certain meaning." *Biogen Idec, Inc. v. GlaxoSmithKline LLC*, 713 F.3d 1090, 1095 (Fed. Cir. 2013). Because this disavowing language

[4] *See* Merriam-Webster, "directed to," https://www.merriam-webster.com/dictionary/directed%20to. Last visited Aug. 21, 2025.

is ambiguous, the Court finds that the patentee did not limit the scope by requiring a toroid heater with his amendment. Therefore, the Court's construction of the claim does not require a toroid heater. *NMT Med., Inc. v. Cardia, Inc.*, 239 F. App'x 593, 600 (Fed. Cir. 2007) ("we have declined to apply the doctrine of prosecution disclaimer where the alleged disavowal of claim scope is ambiguous.") (citations modified).

iv. External Load

Feit argues that the structure should include external load 26. (*See* Figure 2). Feit repeats the same argument as it did for the "toroid heater," that the patentee restricted the scope of the meaning with his 1994 amendment. (Dkt. 320 at 7 n. 5). For the reasons discussed above, the Court is not persuaded by this evidence. Alternatively, Feit argues that Patent '140's specification describes Figure 2 as "a schematic diagram illustrating the essential features of a push-pull inverter circuit particularly suitable for energizing the lamp unit of FIG. 1." (*Id.* at 7). This, Feit argues, is an intentional disclaimer of the claim scope. (*Id.*)

This specification, however, does not unequivocally limit the invention; rather, by its own language, it discloses the essential features of an "inverter circuit" which is "*particularly suitable*" for operating the Figure 1 structure. (Dkt. 325 at 12) (emphasis added). The language "particularly suitable" suggests this specification was merely the patentee's "preferred embodiment." *See Abbott Lab'ys &, Surmodics, Inc. v. Church & Dwight Co.*, 2008 WL 5387848, at *2 (N.D. Ill. Dec. 22, 2008) (preferred embodiment is "just one way of practicing the invention). And a written description of a "preferred embodiment" does not limit a claim. *Comaper Corp. v. Antec, Inc.*, 596 F.3d 1343, 1348 (Fed. Cir. 2010) ("[T]his court has repeatedly cautioned against limiting claims to a preferred embodiment.").

Accordingly, because the patentee did not waive the claim scope in a manner "both so clear as to show reasonable clarity and deliberateness, and so unmistakable as to be unambiguous evidence of disclaimer," the Court finds an "external load" is not required. *Dealertrack, Inc. v. Huber*, 674 F.3d 1315, 1322 (Fed. Cir. 2012).

v. Slow-down Capacitor

The parties disagree over whether a slow-down capacitor is necessary. Capacitor 68 (*See* Figure 2), also called a "slow-down" capacitor, plays a role in re-shaping the inverter's waveform output voltage. (Dkt. 325 at 13). It changes the shape of the wave from a square to a trapezoid. (*Id.*) CFLT argues that a trapezoidal inverter output voltage is not necessary to any of "inverter and load circuitry's" specified functions and therefore, capacitor 68 should not be read in as a limitation. (*Id.*) Feit disagrees. To support its position, Feit cites the prosecution history, wherein the inventor identified "main elements" from Figure 2 that fall within the scope of each limitation of Claim 15's application. (Dkt. 320 at 11–12).

On this issue, the Federal Circuit has stated that "[a] disclaimer or disavowal of claim scope must be clear and unmistakable, requiring 'words or expressions of manifest exclusion or restriction' " in the intrinsic record." *Unwired Planet, LLC v. Apple Inc.*, 829 F.3d 1353, 1358 (Fed. Cir. 2016) (quoting *Teleflex, Inc. v. Ficosa N. Am. Corp.*, 299 F.3d 1313, 1327 (Fed. Cir. 2002). The inventor's intent was not clear here. Claim 28 of Patent '140 specifically calls for a slow-down capacitor. (Dkt. 325-1 ¶ 25). Had the inventor intended for the "main elements" from Claim 15 to restrict all claims, there would be no need for him to recite the slow-down capacitator *again* in Claim 28—it would be redundant. *Takeda Pharm. Co. v. Zydus Pharms. USA, Inc.*, 743 F.3d 1359, 1365 (Fed. Cir. 2014) (refusing to read in a limitation because the specification indicated that the inventor knew how to claim such a limitation "when [he] so desired").

Because all the "main elements" in the Summary of Invention are not required, a POSA would likely not find that a "slow-down" capacitator is required. Accordingly, the Court's construction does not require a "slow-down" capacitator.

vi. Bias Capacitator and Shunt Diodes

Next, Feit argues that bias capacitators and shunt diodes are required while CFLT contends they are not. (Dkt. 320 at 12; Dkt. 325 at 16). Like its argument that slow-down capacitators are required, Feit's argument is premised on the notion that the inventor included these features in his "main elements." (Dkt. 320 at 11–13). For similar reasons as the slow-down capacitator question, bias capacitators and shunt diodes are not required. Fig[ure] 2 is merely "a schematic diagram illustrating the essential features of a push-pull inverter circuit *particularly suitable for energizing the lamp unit* in Fig[ure] 1." (Dkt. 325-1 at 3:49–51) (emphasis added). This language further suggests that not all the elements in Figure 2 are required.

Additionally, in the '140 Patent application, it states that the bias capacitators are utilized to accelerate "turn[ing] off a conducting transistor to *increase its switching speed* and to achieve inverter circuit efficiency . . . . " (Dkt. 325 at 7:18–20) (emphasis added). If bias capacitors are only necessary to speed up the process, then they are not required. *See Asyst*, 268 F.3d at 1370 (Section 112 paragraph six does not allow incorporating written description beyond what is necessary to perform function) (citations omitted). Feit does not point to any independent link between shunt diodes and "inverter and load circuitry." (Dkt. 320 at 12); *See Med. Instrumentation & Diagnostics Corp. v. Elekta AB*, 344 F.3d 1205, 1210 (Fed. Cir. 2003) (a " 'structure disclosed in the specification is 'corresponding' structure only if the specification or prosecution history clearly links or associates that structure to the function recited in the claim.' ") (quoting *B. Braun Med. Inc. v. Abbott Labs.*, 124 F.3d 1419, 1424 (Fed.Cir.1997)).

Accordingly, the Court's claim construction does not require bias capacitators and shunt diodes.

vii. Whether Compact Construction is Required

Separate from the terms at issue within the claim language, the parties also dispute whether, based on the description of the invention, the "inverter and load circuitry" must be capable of so-called "compact construction" so that it may fit within the base of a compact fluorescent lamp. (*See* Dkt. 329 at 4; Dkt. 373 at 2). CFLT argues that compact construction limits the claim, while Feit avers that it does not. (Dkt. 327 at 10).

Applying a means-plus function analysis, Feit contends that the compactness capability feature is not relevant to the four recited functions of the "inverter and load circuitry" limitation. (Dkt. 327 at 10). Feit ignores, however, that a specification may contain "a special definition given to a claim term by the patentee that differs from the meaning it would otherwise possess." *Phillips*, 415 F.3d at 1314. In such cases, the inventor's definition controls. *Id.* Moreover, "the specification may reveal an intentional disclaimer, or disavowal, of claim scope by the inventor. In that instance as well, the inventor has dictated the correct claim scope, and the inventor's intention, as expressed in the specification, is regarded as dispositive." *Id.*

Here, in his description of the invention, the inventor stated: "The inverter circuits according to the present invention are highly efficient, *can be compactly constructed* and are ideally suited for energizing gas discharge lamps, particularly compact folded 'instant-start' 'self-ballasted' fluorescent lamps." (Dkt. 319 at 11, JA-7 at 2:67–3:4) (emphasis added). This language represents "an intentional disclaimer" because it requires that the inverter circuit *can be* compactly constructed. *Phillips*, 415 F.3d at 1314. CFLT's proposed limitation aligns with the inventor's disclaimer. Accordingly, the Court adopts CFLT's proposed language: the inverter and load

circuitry must be capable of compact construction so that it may fit within the base of a compact fluorescent lamp.

b. "[G]as discharge lamp" ('140 Patent, Claims 16 and 17)

The next claim term at issue also relates to Claims 16 and 17 of the '140 Patent—specifically, claim language discussing the gas discharge lamp. (Dkt. 329 at 4). The relevant excerpt from the original claim language is:

> the *gas discharge lamp* being characterized by drawing a lamp current from the AC terminals at certain times and not at other times

(*Id.*) (emphasis added). The parties dispute whether the gas discharge lamp must be able to be disconnected from the system. (Dkt. 320 at 13).

Feit's Proposed Construction:

> [T]he gas discharge lamp is disconnectable from the inverter and load circuitry.

CFLT's Proposed Construction:

> Plain and ordinary meaning.

(Dkt. 329 at 4).

Evaluating the other claim language, the inventor did use the word "disconnectible" for other claims. In his preferred embodiment for Claim 12, he wrote "[a]n arrangement comprising: . . . load circuitry connected with the AC inverter terminals; the load circuitry being characterized by: (a) including a *disconnectable* gas discharge lamp . . . " (Dkt. 319 at 20, JA-16 at 19:21–23). When other language indicates an inventor "knew how to" add a term to limit the claim, it weighs against reading that word into a language found elsewhere. *Enzo Biochem, Inc. v. Applera Corp.*, 599 F.3d 1325, 1333 (Fed. Cir. 2010). For example, in *Unwired Planet*, the Federal Circuit considered the application of alleged disclaimers in the Summary of Invention section. The

Court explained that when a party seeks to limit a claim with a term, which is not found in the claim language, and the inventor explicitly used that term elsewhere, the Court will not read in the term to limit the claim. 829 F.3d at 1359.

Here, the case is similar. Feit requests that the Court read in "disconnectible" to Claims 16 and 17. (Dkt. 320 at 13–14). Like in *Unwired Planet*, wherein the Court found that the inventor's specification did not "clearly and unmistakingly require[e]" the term at issue, here the claim language is similar. *Unwired Planet*, 829 F.3d at 1359. The inventor demonstrated that he "knew how to" add "disconnectible" when he so desired—this is evident from the Claim 12 language; in Claim 16, however, he opted not to use that word. *Enzo Biochem*, 599 F.3d 1325, 1333

Moreover, Feit has not presented a sufficient argument to persuade the Court that a POSA would understand the invention as requiring the gas discharge lamp to be disconnectible. True, it highlights language from the '140 Patent Abstract, which shows the inventor contemplated the lamps disconnectability. (*See* Dkt. 320 at 13) (underscoring an excerpt from the Summary of Invention, which includes the term "disconnectability"). As the Federal Circuit explained in *Unwired Planet*, however, short of statements akin to "the present invention includes ...," "the present invention is ...," and "all embodiments of the present invention are ..." the Court is reluctant to find ambiguous language in the Summary of Invention to restrict the patent. 829 F.3d at 1358.

Accordingly, the Court adopts the plain and ordinary meaning of the language at issue for Claims 16 and 17.

II. The '464 Patent

For claim 3 of the '464 Patent, there are three terms at issue: "electronic sub-assembly," "fluorescent lamp" and "distinctly shorter." (Dkt. 325 at 2). Note that, unlike with the '140 Patent, there are multiple sections of the '464 Patent Abstract at issue. Therefore, the Court does not

provide one full claim language excerpt containing all three terms in dispute and instead provides separate excerpts from the Patent Abstract.

a. "[E]lectronic sub-assembly" Means-Plus-Function Limitation (Claim 3)

For the "electronic sub-assembly" limitation, the full '464 Patent claim language contains four functions, which are separated by semi-colons. This is undisputed. (Dkt. 325 at 3). The parties agree about the meaning of the functions but disagree about their corresponding, underlying structures. (Dkt. 320 at 16). The parties each contend that the corresponding structure for the claimed function consists of two assemblies. The first assembly addresses the first claimed function, and the second assembly addresses the second through fourth claimed function. (Dkt. 320 at 17).

Below is the relevant claim language for "electronic sub-assembly." These proposed constructions cover all four functions. The functions are separated with numbered brackets to demonstrate which proposed language corresponds to which function. In arguing for the structure's corresponding functions, the parties reference numbers that correspond to elements in Figure 2. (*See supra* Discussion Part.I at 2). Further, Figure 2 of the '140 Patent is identical to Figure 2 of the '464 Patent (Dkt. 319 at JA-230). The claim construction formatting is slightly altered from the original to make it easier to read.

- [(1])] being operative to supply an alternating voltage at its output terminals provided it be supplied with an AC power line voltage at its input terminals;
- [(2)] the frequency of the alternating voltage being distinctly higher than that of the AC power line voltage;
- [(3)] the electronic subassembly being additionally characterized by including a transistor through which flows unidirectional current pulses at a periodic rate equal to that of the alternating voltage;
- [(4)] each current pulse having a duration distinctly shorter than half of the complete cycle of the alternating voltage.

(Dkt. 320 at 15–16; JA-238 at 11:19-34).

Feit's Proposed Construction:

- [1] the electronic sub-assembly requires "a bridge rectifier, having four diodes connectable to a 240 volt AC supply at two terminals, a rectifier and voltage doubler connectable to a 120 volt AC input taken between a ground line and the terminals, and two connected capacitors, the ground line being directly connected to a half bridge inverter; and two leads that connect a ballasting circuit to a screw-type plug itself adapted for screw-in insertion into an Edison-type incandescent socket; and
- [2-4] half-bridge inverter with two transistors series-connected across the DC output of the power supply and two toroidal saturable core transformers, an external load, a variable inductor and series-connected capacitor, two bias capacitors, two shunt diodes, a capacitor connected across the collector-emitter terminals of one of the toroidal saturable core transformers, a toroid heater to heat the toroidal saturable core transformers and connected in series with the external load and the series connected capacitor."

CFLT's Proposed Construction:

- To achieve function [1] Bridge rectifier (including diodes 27, 28, 29, and 31) of power supply 23, or voltage doubler and rectifier of power supply 23; and
- [To achieve functions 2, 3 and 4] half-bridge inverter 24 to the extent of: (1) at least one of saturable transformer (49 or 47) whose secondary winding(s) (such as 48 or 46) drive bases of two inverter transistors (42 and 43) for turn-on and turn-off, (2) the primary winding(s) (such as 48 or 46) plus the inductor 51 / capacitor 52 form a series current path between the return (e.g., ground or AC bus) and the midpoint (M) of the transistors (42 and 43); (3) the capacitor 52 being connected in parallel with the lamp load 26; and (4) lamp current flowing the primary winding(s) (such as 48 or 46) of at least one saturable inductors.

(Dkt. 329 at 4–5).

For function 1, the parties dispute whether capacitators 34 and 36 are necessary to perform the function. Feit asserts that the power supply 23 in Figure 2 is necessary to perform the function of receiving "an AC power line voltage at its input terminals" and "supply[ing] an alternating

voltage at its output terminals." (Dkt. 320 at 17). CFLT argues that only a rectifier is needed to achieve the function and "not the full range of circuitry provided for in power supply 23 . . . . " (Dkt. 325 at 20).

The '464 patent specification states: "Because the voltages across transistors 42, 43 are relatively low (due to the effect of capacitors 34, 36), the half-bridge inverter 24 is very reliable." (Dkt. 319, JA-235, '464 Patent at 5:46–47). Elsewhere, it states "[w]ith reference to FIG. 2, a power supply 23, connected to a conventional AC [power] input, *provides a DC [power]* output for supplying a high efficiency inverter circuit 24." (Dkt. 319, JA-234 at 3:7–9) (emphasis added).

This language suggests that CFLT's construction for function 1 is correct. The language implies that capacitators 34 and 36 merely enhance the inverter's functionality. In other words, these capacitors are not necessary. In contrast, the language demonstrates that power supply 23 is necessary to provide DC power. The Court, therefore, adopts CFLT's construction as to function 1. For functions 2–4, the parties agree that this correlates to the same function disclosed in the "inverter and load circuitry" means-plus-function limitation of the '140 Patent. (Dkt. 320 at 18). Thus, for these functions in Patent '464, the Court constructs the claim language the same way it did for "inverter and load circuitry" above.

b. "[F]luorescent lamp" Means-Plus-Function Limitation (Claim 3)

Below is the original claim language for "fluorescent lamp," with the term at issue italicized.

> A structure characterized by having a central axis about which the following elements are assembled: . . .
>
> "*a fluorescent lamp* having lamp terminals and plural cylindrical lamp segments disposed apart from, but parallel to, each other as well as to the central axis; each of the plural cylindrical lamp segments having a total length; the *fluorescent lamp* being further characterized in that a flat plane disposed perpendicular to the

> central axis and intersecting one of the cylindrical lamp segments anywhere along its total length creates a cross-sectional pattern that (i) is symmetrical with respect to a flat plane disposed parallel to the central axis, and (ii) includes nothing but cross-sections of substantially identical cylindrical lamp segments;"

(Dkt. 319 at JA-237–38 at 10:66–67, 11:7–18).

Feit's Proposed Construction:

> a fluorescent lamp being a U-shaped tube structure, such that a flat plane disposed perpendicular to the central axis and intersecting one of the cylindrical lamp segments anywhere along its total length produces a symmetrical cross-sectional pattern reflecting nothing but cross-sections of substantially identical cylindrical lamp segments.

CFLT's Proposed Construction:

> Plain and ordinary meaning.

(Dkt. 329 at 5–6).

Feit argues that because the claim language is clear, the "fluorescent lamp" must be u-shaped. (Dkt. 320 at 19). Any deviation, in other words, would improperly broaden the claim scope to include other shapes or designs. CFLT contends, in contrast, that requiring the u-shape would impermissibly restrict the claim's scope. (Dkt. 325 at 23). It would prevent other shapes, such as a parallel lamp segment, from fitting the claim language. (*Id.*)

In support of its argument, Feit points to prosecution history. (Dkt. 320 at 19). For prosecution history to narrow the meaning of a claim, however, the patentee must "unequivocally and unambiguously disavow[] a certain meaning." *Biogen*, 713 F.3d at 1095; *VirnetX Inc. v. Apple Inc.*, 931 F.3d 1363, 1379 (Fed. Cir. 2019) ("Disavowal requires expressions of manifest exclusion or restriction, representing a clear disavowal of claim scope.") (citations modified). Though CFLT avers that it does not seek a disavowal, (Dkt. 325 at 13), restricting the claim to "u-shapes" implicitly is a disavowal since it would limit the claim's scope. *See Acantha LLC v. DePuy Synthes*

Sales, Inc., 2017 WL 972106, at *4 (E.D. Wis. Mar. 13, 2017) (disavowal occurs when a patentee makes clear the invention does not include particular feature) (citations omitted).

Feit has provided sufficient support to demonstrate the inventor gave an "expression[] of manifest exclusion or restriction" for non-u-shaped fluorescent lights. *VirnetX*, 931 F.3d at 1379 First, Feit cites to an appellate brief in which the inventor disagreed with an examiner's argument that putting a u-shaped tube structure onto an Abernathy patent, (*See* Dkt. 325-3 at 1, Exhibit C, Abernathy patent), would not lead to an "obviousness rejection." Second, the Patent Board, as part of the appeals process, seemed to endorse this reading writing, "[t]he disclosed invention is directed to a U-shaped fluorescent lamp . . . . " (*See* Dkt 319, JA-261). The Court agrees with Judge Andrews that the fact that the inventor and the Patent Board agreed that the invention was limited to a u-shaped lamp provides sufficient evidence that a POSA would understand the claim the same way. (Dkt. 320-1 at 23).

For these reasons, the Court adopts Feit's construction as to the fluorescent lamps referenced in claim 3.

c. "[D]istinctly shorter" (Claim 3)

Below is the original claim language associated with "distinctly shorter," with the term at issue italicized.

> "each current pulse having a duration *distinctly shorter* than half of the complete cycle of the alternating voltage"

(Dkt. 319, JA-238 at 11:32–34).

Feit's Proposed Construction:

> Not susceptible to construction, therefore, indefinite under 35 U.S.C. § 112.

CFLT's Proposed Construction:

Plain and ordinary meaning.

(Dkt. 320 at 19).

The parties disagree over whether the Court may construct this claim. (*Id.* at 20). Feit asserts that the phrase "distinctly shorter" is indefinite under 35 U.S.C. § 112 because POSAs would have different interpretations of its meaning. (*Id.*) CFLT proposes that a POSA would understand the term "distinctly" as "in a way that is very noticeable or apparent" or "measurably," such as outside of measurement error. (Dkt. 325 at 24).

A claim is indefinite only if, when "read in light of the specification" and "prosecution history," it "fail[s] to inform, with reasonable certainty, those skilled in the art about the scope of the invention." *Niazi Licensing Corp. v. St. Jude Med. S.C., Inc.*, 30 F.4th 1339, 1346 (Fed. Cir. 2022) (quoting *Nautilus, Inc. v. Biosig Instruments, Inc.*, 572 U.S. 898, 901 (2014)). Further, "[w]hile there must be objective boundaries, we have explained that 'a patentee need not define his invention with mathematical precision in order to comply with the definiteness requirement.' " *Id.* at 1347 (quoting *Guangdong Alison Hi-Tech Co. v. Int'l Trade Comm'n*, 936 F.3d 1353, 1359 (Fed. Cir. 2019)). The inquiry is "whether the use of descriptive phrasing in the claim results in a claim that 'fail[s] to inform, with reasonable certainty, those skilled in the art about the scope of the invention.' " *Id.* at 1348 (quoting *Nautilus*, 572 U.S. at 901).

Here, the phrase "distinctly shorter" seems to fail to provide reasonable certainty to a POSA about the scope of invention. *Id.* As far as the Court can tell, the prosecution history does not make clear how much shorter the current pulse must be for it to qualify as "distinctly shorter." True, the Patent Abstract states that "the conduction period of each transistor is desirably shorter in duration than one quarter of the full period corresponding to the natural resonant frequency of the inductor

and capacitor combination." (Dkt. 319, JA-235 at 5:18–22). But this leaves ambiguous whether the conduction period *must be* less than one quarter in duration for it to meet the inventor's "distinctly shorter" standard or if that length is *simply sufficient* to meet the standard.

In a previous ruling, the Court stated it would reserve judgment on indefinite arguments until summary judgment. (Dkt. 311 at 3). Considering this prior ruling and because the Court could benefit from more fulsome arguments from the parties on the issue, the Court will reserve judgment as to this construction on the matter until summary judgment.

CONCLUSION

For the reasons stated, the Court construes the disputed terms as set forth above.

Virginia M. Kendall
United States District Judge

Date: August 25, 2025